CLAIMS

1. A isolated nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of:

   a. a nucleic acid sequence having at least 30% identity to a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9;

   b. a nucleic acid sequence that hybridizes under stringent hybridization conditions with a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9; and

   c. a nucleic acid sequence fully complementary to a nucleic acid sequence of (a) or (b); wherein said nucleic acid molecule of (a), (b), or (c) encodes an expression product that is differentially expressed in obese animals compared to lean animals, in fasted animals compared to fed animals, or in diabetic animals compared to non-diabetic animals in a tissue selected from the group consisting of the stomach, liver and hypothalamus.

2. The isolated nucleic acid molecule of Claim 1 wherein the nucleic acid molecule comprises a nucleotide sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO: 3, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9, or a nucleic acid sequence fully complementary to any of said nucleic acid sequences.

3. The isolated nucleic acid molecule of Claim 1 wherein the nucleic acid molecule encodes a protein comprising an amino acid sequence SEQ ID NO:4.

4. A therapeutic composition comprising a nucleic acid molecule of Claim 1 and a pharmaceutically acceptable carrier or diluent

5. An isolated protein encoded by a nucleic acid sequence selected from the group consisting of:

   a. a nucleic acid sequence having at least 30% identity to a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9;

b. a nucleic acid sequence that hybridizes under stringent hybridization conditions with a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9; and

c. a nucleic acid sequence fully complementary to a nucleic acid sequence of (a) or (b); wherein said protein is differentially expressed in obese animals compared to lean animals, in fasted animals compared to fed animals, or in diabetic animals compared to non-diabetic animals in a tissue selected from the group consisting of the stomach, liver and hypothalamus.

6. The isolated protein of Claim 5, wherein the protein comprises an amino acid sequence SEQ ID NO:4.

7. The isolated protein of Claim 5, wherein the protein is encoded by a nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9.

8. A therapeutic composition comprising a protein of Claim 5 and a pharmaceutically acceptable carrier or diluent.

9. An isolated antibody that selectively binds to a protein of Claim 5.

10. A therapeutic composition comprising an antibody of Claim 9 and a pharmaceutically acceptable carrier or diluent.

11. A method for modulating expression of a biological molecule selected from the group consisting of *AGT-119*, *AGT-120, AGT-121, AGT-122, AGT-422, AGT-423* and *AGT-504* in a mammal, said method comprising administering to said mammal an effective amount of a modulator of said biological molecule..

12. A method of modulating activity of a biological molecule selected from the group consisting of AGT-119, AGT-120, AGT-121, AGT-122, AGT-422, AGT-423 and AGT–504 in a mammal, said method comprising administering to said mammal an effective amount of a modulator of said biological molecule.

13. A method of treating a mammal suffering from a condition characterized by symptoms selected from the group consisting of obesity, anorexia, diabetes and energy imbalance, said method comprising administering to said mammal a composition capable of modulating the expression or activity of a biological molecule selected from the group consisting of *AGT-119*, *AGT-120, AGT-121, AGT-122, AGT-422, AGT-423* and *AGT-504*.

14. A method of treating a mammal suffering from a condition characterized by symptoms selected from the group consisting of obesity, anorexia, diabetes and energy imbalance, said method comprising administering to said mammal a biological molecule selected from the group consisting of AGT-119, AGT-120, AGT-121, AGT-122, AGT-422, AGT-423 and AGT-504 or *AGT-119*, *AGT-120, AGT-121, AGT-122, AGT-422, AGT-423* and *AGT-504*.

15. A method of detecting a compound capable of effecting the activity of a biological molecule selected from the group consisting of AGT-119, AGT-120, AGT-121, AGT-122, AGT-422, AGT-423 and AGT-504 or *AGT-119*, *AGT-120, AGT-121, AGT-122, AGT-422, AGT-423* and *AGT-504*, said method comprising contacting said biological molecule with a candidate compound and observing the effect on the activity of said biological molecule.

16. A method of detecting a compound capable of effecting the expression of a biological molecule selected from the group consisting of AGT-119, AGT-120, AGT-121, AGT-122, AGT-422, AGT-423 and AGT-504 or *AGT-119*, *AGT-120, AGT-121, AGT-122, AGT-422, AGT-423* and *AGT-504*, said method comprising administering a canditate compound to a mammal and observing the effect on the expression of said biological molecule.

17. A composition comprising a modulator of the expression or activity of a biological molecule selected from the group consisting of *AGT-119*, *AGT -120, AGT-121, AGT-122, AGT-422, AGT-423* and *AGT-504* and a pharmaceutically acceptable carrier or diluent.

18. A method for detecting a biological molecule selected from the group consisting of AGT-119, AGT-120, AGT-121, AGT-122, AGT-422, AGT-423 and AGT-504 in a biological sample, said method comprising contacting said biological sample with an antibody specific for any of said biological molecules and detecting a complex between said biological molecule and said antibody.

19. A isolated nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9.

20. An isolated protein encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, and SEQ ID NO:9.